

The following claims are presented for examination:

1. (currently amended) A method comprising:
dividing an executable software program ~~in memory~~ into an executable image, a data image, and an execution history image;
storing said executable image, said data image, and said execution history image into a memory; and
classifying a first statement in said execution history image into one of a mutable statement and an immutable statement.
2. (original) The method of claim 1 further comprising:
executing cryptographic integrity checks on said immutable statement; and
encrypting said immutable statement.
3. (currently amended) The method of claim 1 further comprising:
executing executable statements, local constants, and singly de-referenced pointers in said executable image;
processing data, data write-backs, and data read-backs in said data image, wherein said data image is accessed from said executable image using a computed offset into said data image from said executable image;
logging the usage of said first statement into said execution history image; and
terminating said executable software program when a mutable statement changes an immutable statement in **said** memory.
4. (currently amended) The method of claim 3 further comprising re-mapping said first statement into a new executable software program wherein immutable statements are stored in locations in **said** memory such that executing mutable statements cannot overwrite mutable statements.
5. (original) The method of claim 1 wherein classifying further comprises mapping said first statement into one of an executable statement, a single data constant, a singly de-referenced pointer to data, an immutable multiply de-referenced pointer to data, an immutable data location, a mutable pointer location, a mutable data location, an input buffer, an output buffer, and an unused location.

6. (currently amended) A method comprising:
dividing an executable software program **in-memory** into an executable image, a data image, and an execution history image;

storing said executable image, said data image, and said execution history image into a memory;

executing executable statements, local constants, and singly de-referenced pointers in said executable image; and

processing data, data write-backs, and data read-backs in said data image, wherein said data image is accessed from said executable image using a computed offset into said data image from said executable image.

7. (currently amended) The method of **claim-5 claim 6** further comprising logging the usage of a first statement into said execution history image as said statement is processed.

8. (original) An apparatus comprising:
a processor;
a memory connected to said processor;
an executable software program residing in said memory; and
an operating system residing in said memory and executing on said processor,
wherein said operating system comprises a software module for:
dividing an executable software program in memory into an executable image, a data image, and an execution history image; and
classifying a first statement in said execution history image into one of a mutable statement and an immutable statement.

9. (original) The apparatus of claim 8 wherein said operating system further comprises a software module for:
executing cryptographic integrity checks on said immutable statement; and
encrypting said immutable statement.

10. (original) The apparatus of claim 8 wherein said operating system further comprises a software module for:
executing executable statements, local constant, and singly de-referenced pointers in said executable image;

processing data, data write-backs, and data read-backs in said data image, wherein said data image is accessed from said executable image using a computed offset into said data image from said executable image;

logging the usage of said first statement into said execution history image; and
terminating said executable software program when a mutable statement changes an immutable statement in memory.

11. (original) The apparatus of claim 10 wherein said operating system further comprises a software module for re-mapping said first statement into a new executable software program wherein immutable statements are stored in locations in memory such that executing mutable statements cannot overwrite mutable statements.

12. (original) The apparatus of claim 8 wherein classifying further comprises mapping said first statement into one of an executable statement, a single data constant, a singly de-referenced pointer to data, an immutable multiply de-referenced pointer to data, an immutable data location, a mutable pointer location, a mutable data location, an input buffer, an output buffer, and an unused location.

13. (original) An apparatus comprising:
a processor;
a memory connected to said processor;
an executable software program residing in said memory; and
an operating system residing in said memory and executing on said processor,
wherein said operating system comprises a software module for:
dividing an executable software program in memory into an executable image, a data image, and an execution history image; and
executing a statement in said executable image, wherein said executing further comprises executing data write-backs and data read-backs in said data image, and wherein said data image is accessed using a computed offset into said data image from said executable image.

14. (original) The apparatus of claim 13 wherein said operating system further comprises a software module for logging the usage of said statement into said execution history image as said statement is executed from said executable image.

- 15.** (original) An apparatus comprising:
a host computer comprising a memory and a processor;
an executable software program residing in said memory; and
an operating system residing in said memory and executing on said processor,
wherein said operating system comprises a software module for:
dividing an executable software program in memory into an executable image, a
data image, and an execution history image; and
classifying a first statement in said execution history image into one of a mutable
statement and an immutable statement.
- 16.** (original) The apparatus of claim 15 wherein said operating system further
comprises a software module for:
executing cryptographic integrity checks on said immutable statement; and
encrypting said immutable statement.
- 17.** (original) The apparatus of claim 15 wherein said operating system further
comprises a software module for:
executing executable statements, local constant, and singly de-referenced
pointers in said executable image;
processing data, data write-backs, and data read-backs in said data image,
wherein said data image is accessed from said executable image using a
computed offset into said data image from said executable image;
logging usage of said first statement into said execution history image; and
terminating said executable software program when a mutable statement
changes an immutable statement in memory.
- 18.** (original) The apparatus of claim 17 wherein said operating system further
comprises a software module for re-mapping said first statement into a new executable
software program wherein immutable statements are stored in locations in memory such
that executing mutable statements cannot overwrite mutable statements.
- 19.** (original) The apparatus of claim 15 wherein classifying further comprises
mapping said first statement into one of an executable statement, a single data constant, a
singly de-referenced pointer to data, an immutable multiply de-referenced pointer to data,

an immutable data location, a mutable pointer location, a mutable data location, an input buffer, an output buffer, and an unused location.

20. (original) An apparatus comprising:
a host computer comprising a memory and a processor;
an executable software program residing in said memory; and
an operating system residing in said memory and executing on said processor,
wherein said operating system comprises a software module for:
dividing an executable software program in memory into an executable image, a
data image, and an execution history image; and
executing a statement in said executable image, wherein said executing further
comprises executing data write-backs and data read-backs in said data
image, and wherein said data image is accessed using a computed offset into
said data image from said executable image.

21. (original) The apparatus of claim 20 wherein said operating system further
comprises a software module for logging the usage of said statement into said execution
history image as said statement is executed from said executable image.

22. (original) A machine-readable medium comprising a software module for:
dividing an executable software program in memory into an executable image, a
data image, and an execution history image; and
classifying a first statement in said execution history image into one of a mutable
statement and an immutable statement.

23. (original) The machine-readable medium of claim 22 further comprising a
software module for:
executing cryptographic integrity checks on said immutable statement; and
encrypting said immutable statement.

24. (original) The machine-readable medium of claim 22 further comprising a
software module for:
executing executable statements, local constant, and singly de-referenced
pointers in said executable image;

processing data, data write-backs, and data read-backs in said data image, wherein said data image is accessed from said executable image using a computed offset into said data image from said executable image; logging the usage of said first statement into said execution history image; and terminating said executable software program when a mutable statement changes an immutable statement in memory.

25. (original) The machine-readable medium of claim 24 further comprising a software module for re-mapping said first statement into a new executable software program wherein immutable statements are stored in locations in memory such that executing mutable statements cannot overwrite mutable statements.

26. (original) The machine-readable medium of claim 22 wherein classifying further comprises mapping said first statement into one of an executable statement, a single data constant, a singly de-referenced pointer to data, an immutable multiply de-referenced pointer to data, an immutable data location, a mutable pointer location, a mutable data location, an input buffer, an output buffer, and an unused location.

27. (original) A machine-readable medium comprising a software module for: dividing an executable software program in memory into an executable image, a data image, and an execution history image; and executing a statement in said executable image, wherein said executing further comprises executing data write-backs and data read-backs in said data image, and wherein said data image is accessed using a computed offset into said data image from said executable image.

28. (original) The machine-readable medium of claim 27 further comprising a software module for logging the usage of said statement into said execution history image as said statement is executed from said executable image.